REMARKS

This Amendment is filed in response to the Office Action dated May 30, 2006, which has a shortened statutory period set to expire August 30, 2006.

Allowable Subject Matter

Applicants greatly appreciate the Examiner's indication of allowable subject matter. Specifically, Claims 11-12, and 23-51 are allowed. Claim 59 is objected to as being dependent from a rejected claim but would be allowed if rewritten in independent form to include the limitations of its base claim and any intervening claims. Applicants have rewritten Claim 59 in independent form to include the limitations of its base claim (Claim 52) and any intervening claims (none). Therefore, Applicants request reconsideration and withdrawal of the objection to Claim 59.

Claims 6, 18, and 54 Are Patentable Over Keevill

Claim 6 recites in part:

> wherein generating the frequency domain representation of the second symbol includes sampling the second symbol early by a certain number of samples, further comprising:
>
> determining an expected slope based on the certain number of samples by which the second symbol is sampled early; and
>
> determining based on the slope and the expected slope a timing adjustment.

Claim 18 recites in part:

> wherein generating the frequency domain representation of the first data symbol includes sampling the first data symbol early by a certain number of samples, further comprising:
>
> determining an expected slope based on the certain number of samples by which the first data symbol is sampled early; and

determining based on the slope and the expected slope a timing adjustment.

Claim 54 recites in part:

wherein the first data symbol has a first data symbol frequency representation that is based on sampling the first data symbol early by a certain number of samples, and

wherein the pilot phase tracking circuit determines an expected slope based on the certain number of samples by which the first data symbol is sampled early, and determines based on the slope and the expected slope a timing adjustment.

The Third Office Action characterizes the first control signal representing the mean phase difference (col. 8, lines 40-61) as corresponding to the expected slope. Applicants respectfully traverse this characterization. Specifically, Keevil fails to teach that this mean phase difference is computed by the early sampling of a data symbol. Therefore, Applicants request reconsideration and withdrawal of the rejection of Claims 6, 18, and 54.

Claims 60-63 Are Patentable Over Peeters

Claim 60 recites in part:

determining a scaling factor based upon the reference power and the data symbol power; and

scaling the reference channel estimate based upon the correction factors.

Claim 62 recites in part:

a magnitude tracking circuit that is to calculate a reference power based upon pilots of the at least one training symbol and a data symbol power based upon pilots of a data symbol, and is to calculate a scaling factor based upon the reference power and the data symbol power; and

a multiply unit that is to scale the reference channel estimate based upon the scaling factor.

Applicants respectfully submit that Peeters fails to disclose or suggest these limitations. The weighted phase errors are used to produce a clock timing error τ_e that can control either continuous time or discrete time based synchronization structures. Col. 10, lines 42-44. Notably, this clock timing error is not used to scale the reference channel estimate. Thus, Peeters attempts synchronization using a different method than that recited by Applicants.

As taught by Applicants in the Specification, paragraph [0012]:

> The channel estimate shows how the channel affects the amplitude and phase of the samples of the long symbols. The inverse of the channel estimate gives an indication of how the samples of a received data signal need to be adjusted in order to compensate for the effect of the channel.

As further taught by Applicants in the Specification, paragraph [0014]:

> Unfortunately, the inverse of the channel estimate may become invalid with the passage of time due to magnitude changes, frequency offset error, timing drift, and phase noise, and inappropriate to use for decoding data symbols. For example, the pilots of the long symbols on which the inverse channel estimate is based may have an average power magnitude that is different from the average power magnitude of the pilots of a data symbol. Since the 802.11a standard allows transmission using quadrature amplitude modulation, proper decoding of data symbols depends on accurate determination of the amplitude of the subcarriers in a data symbol. Using an inverse channel estimate to decode a data symbol that has pilots whose average power magnitude is different from the average power magnitude of the pilots of the long symbol on which the inverse channel estimate is based may result in improper decoding of the data symbol.

Thus, Applicants submit that scaling the reference channel estimate based upon the scaling factor can advantageously improve decoding of data symbols.

Because Peeters fails to disclose or suggest scaling the reference channel estimate based on the scaling factor, Applicants request reconsideration and withdrawal of the rejection of Claims 60 and 62.

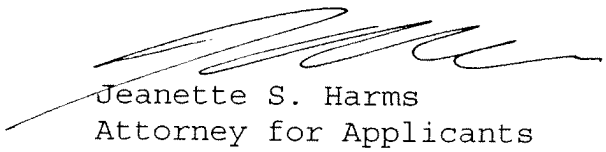
Claims 61 and 63 depend from Claims 60 and 62, respectively, and therefore are patentable for at least the reasons presented for Claims 60 and 62. Based on those reasons, Applicants request reconsideration and withdrawal of the rejection of Claims 61 and 63.

CONCLUSION

Claims 6, 11, 12, 18, 23-51, 54, and 59-63 are pending in the present Application. Allowance of these claims is respectfully requested.

If there are any questions, please telephone the undersigned at 408-451-5907 to expedite prosecution of this case.

Respectfully submitted,



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